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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/390,289	09/03/99	DUGAN J	709.36924X00

EXAMINER	
REEUMO, I	
ART UNIT	**PAPER NUMBER**
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IM22/0214
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/390,289	DUGAN, JEFFREY S.	
	Examiner	Art Unit	
	Jenna-Leigh Befumo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-60 is/are pending in the application.

4a) Of the above claim(s) 32-60 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1 – 31, drawn to a multi-component fiber and fabric made therefrom, classified in class 428, subclass 373, 374 and class 442, subclass 199, 311, 340^{+}, and 361.

   II. Claims 32 – 54, drawn to a method to produce a fabric, classified in class 28, subclass 103.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the fibers do not need to be separated before thermally bonding the fibers to form the non-woven fabric.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with William Solomon on February 2, 2001, a provisional election was made with traverse to prosecute the invention of Group I, claims 1 - 31. Affirmation of this election must be made by applicant in replying to this Office action. Claims

32 – 60 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 22, 23, 30 and 31 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant does not clearly describe how the second segment polymer can concentrate at the cross-over points. What is done to the fabric so that the second segment will only be located at the cross-over points?

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1 – 8, 12, 13, 15, 20, 22, 23, 30 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. The term "being splittable" in claim 1 is indefinite. Is Applicant claiming that the fiber is split or that the components have low cohesion properties so that it can be readily split. Claims 2 – 8 are rejected because of their dependency.

11. The term "copolymers of polyethylene terephthalate and polyamides" in claim 5 and 29 is indefinite. It is unclear what polymer Applicant is claiming as the second polymer material. Can the second polymer material be a copolymer containing both polyethylene terephthalate and polyamides; a copolymer of polyethylene terephthalate and a copolymer of polyamide; or a copolymer of polyethylene terephthalate and polymers of polyamide?

12. Claim 12 recites the limitation "the fabric" in line 2. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 13 is indefinite. It is unclear how the second segment can be "completely melted" without forming a solid sheet or forming so many cross-over points that the fabric becomes a solid, stiff structure? When the melted second segment is cooled is it still in the form of a filament or has the segment spread throughout the fiber-containing material?

14. Claim 15 recites the limitation "the fiber" in line 2. There is insufficient antecedent basis for this limitation in the claim.

15. The term "completely split" in claim 20 is indefinite. It is unclear how the segments can be "completely split" if the fiber-containing material is bonded together by the second segment.

The points where the fiber-containing material is bonded can not be "completely split" or the fiber-containing material would have no structure integrity.

16. Claim 22 is indefinite. How is it that second polymer material "concentrates" at specific crossover points when the fiber-containing material is heated? Is it "concentrated" because the second polymer material surrounds the first material? Or is it "concentrated" because the second polymer material somehow migrates to the cross-over point, causing the amount of second polymer material in that area to be greater than elsewhere? What happens to the filaments composed of the second polymer material? Are there still filaments of both polymer material? Or are cross-over points densely formed throughout the web, so that everywhere there is a filament composed of the second segment a cross-over point forms? Claim 30 is similarly rejected.

17. Claim 23 is indefinite. How is the second polymer material only located at the cross-over points? What happens to the second polymer material filaments? Are there still filaments of both materials or does the fabric become composed of the first segments that are bonded by the second segments? Are the cross-over points densely gathered throughout the web forming a stiff, solid structure? Does the structure still comprise the second polymer material anywhere else besides the cross-over points? Claim 31 is similarly rejected.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 1 – 9, 11, 12, 14 – 20, 24 – 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Murase et al. (5,718,972).

Murase et al. disclose a non-woven fabric made from conjugate fibers (abstract). The conjugate fibers comprise two components A and B wherein the melting point of B is higher than the melting point of A by 30 – 180°C (abstract). Murase et al. teaches multiple combinations of polymers used in the conjugate fiber including polyamide/polyester, polyolefin/polyester, and polyolefin/polyamide (column 4, lines 6 – 17). In Example 1 and 4, the components are high denstity polyethylene, with a melting point of 130°C and polyethylene terephthalate, with a melting point of 258°C. Murase et al. teach that the fiber is splittable by mechanical means of wrinkling (column 2, lines 50 – 54). The conjugate fiber produced can have a fineness in the range of 2 – 12 denier, or a size determined by one having skill in the art (column 5, lines 19 – 22). Murase et al. show the various configurations of the conjugate fiber in Figures 1 – 4, and disclose in Example 4 a conjugate fiber made with 48 total segments. Therefore, claims 1 – 8 are anticipated by Murase et al.

The conjugate fiber described is then used to form a non-woven fabric. The fabric produced is bonded together by heating the lower melting point component to bond the fibers together (column 2, lines 47 – 49). After the fabric is heated the conjugate fibers are split to form filaments from both components (column 7, lines 59 – 64). Murase et al. teach that the conjugate fibers should be at least 70% split (column 7, lines 65 – 67). The filaments are microfibers with a fineness in the range of 0.2 – 2.0 denier (column 8, lines 28 – 34). The non-

woven fabric has a basis weight of 10 to 250 g/m^2, or 0.3 – 7.4 oz/yd^2 (column 9, lines 1 – 2). Thus, Murase et al. anticipates claims 9, 11, 12, 14 – 18, 20, and 29.

Claim 19 is rejected with parent claim 18 since the limitation that the fiber is split due to differential shrinkage is a process limitation which does not add structure to the fabric and has no patentable weight. Since the components taught by Murase et al., are the same used by the Applicant the conjugate fiber would inherently be capable of splitting due to differential shrinkage and impart bulk to the structure. Thus claim 19 is rejected by Murase et al.

Murase et al. disclose that the fabric can be used as filter materials, and artificial leathers (column 9, lines 5 – 12). Further, claims 25 – 28 fail to recite any further structural limitations to the fiber-containing material claimed by claim 9. The terms "wiping cloth," "synthetic leather," "synthetic suede," and "filter" describe intended uses for the non-woven fabric and do not add further structure definition to the claimed fabric. Hence, claims 25 – 28 are not patentably distinct from the non-woven fabric of Murase et al.

Finally Murase et al. disclose that needlepunch and hydroentangling are known methods of producing non-woven fabrics from splittable fibers (column 1, lines 28 – 39). Thus claim 24 is anticipated by Murase et al.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. Claims 10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murase et al.

Murase et al fail to teach using the conjugate fiber to produce yarns or staple fibers. Applicant is given notice official notice that the following is known in the art. Man-made fibers are known to be made in continuous form or chopped up into staple form for specific uses. Hence, the conjugate fiber would inherently be formed into either a continuous or staple fiber. It would be an matter of design choice to use a staple fiber instead of the continuous fiber. Thus, claim 21 is rejected by Murase et al.

Additionally, continuous fibers and staple fibers are spun or twisted together to form yarns. It would be obvious to make yarns out of splittable conjugate fibers so that the fibers can be used to make woven or knitted fabrics. Hence, claim 10 is rejected by Murase et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (8:00am - 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo
February 12, 2001

CHERYL JUSKA
PATENT EXAMINER